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☐ 1: Gene 1990 Dec 15;96(2):249-55

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## Photoprotein aequorin: use as a reporter enzyme in studying gene expression in mammalian cells.

Tanahashi H, Ito T, Inouye S, Tsuji FI, Sakaki Y.

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Aequorin is a luminescent protein present in the jellyfish *Aequoria victoria* which emits light (at 460 nm) in the presence of  $\text{Ca}^{2+}$ . We report here that aequorin can be used as a reporter enzyme to monitor gene expression in eukaryotic cells. A cDNA encoding apoaequorin was fused to several eukaryotic promoters, including those of SV40, RSV and the HSV-1 tk gene, and introduced into several cell lines such as CV-1, COS and HeLa. At appropriate times after transfection, the aequorin activities in cell extracts were measured by monitoring the intensity of light emitted at 460 nm when triggered by  $\text{Ca}^{2+}$  by the use of a photomultiplier photometer. The aequorin assay was shown to be as sensitive as the conventional CAT assay, and the relative activities of various promoters estimated by the aequorin assay were in general agreement with those obtained by the CAT assay. The aequorin assay can be done within 6-7 h from the preparation of extract to the measurement of activity without using radioactive compounds.

PMID: 2269434 [PubMed - indexed for MEDLINE]

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